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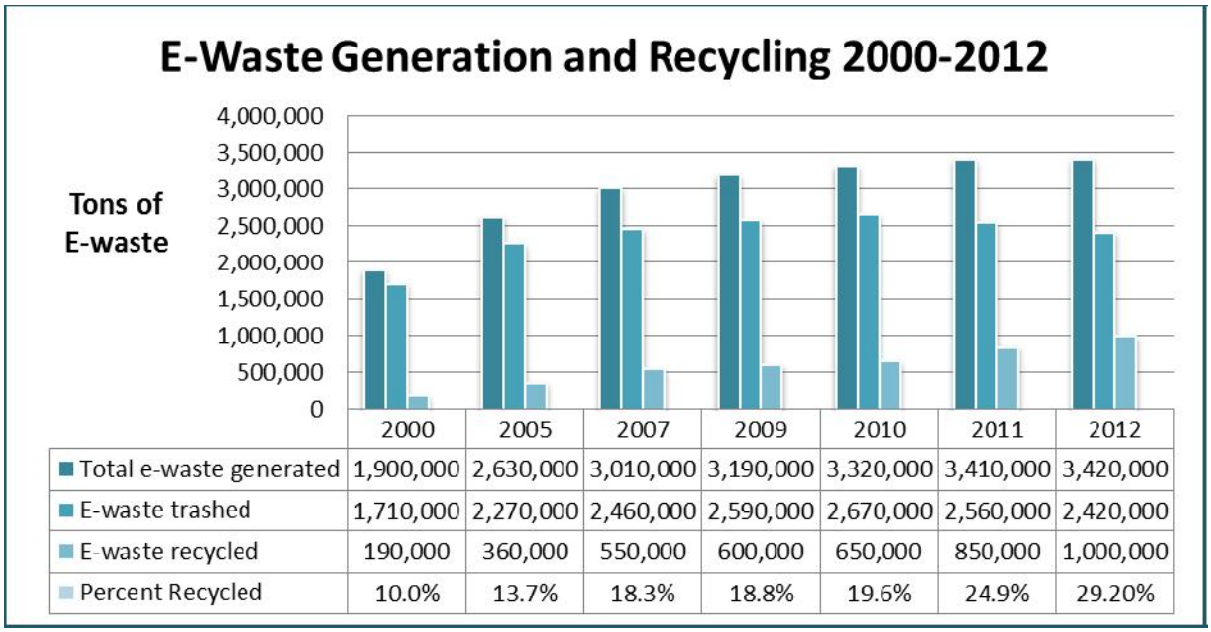
Protection of Environment BYE-waste

Ashish sharma[1]Rahul khatri[2]
[1,2]*Maharishi Arvind International Institute of Technology, Kota, Rajasthan*

Abstract: ***E-Waste or electronic waste refers to all waste formed by electronic devices such as computer,laptop,refrigerator,Smartphone etc.All these are discarded by the owner & thrown aswaste.***
E- Waste causes E-pollution. There are many harmful materials like lead, barium & other heavy metals leaching into ground water. Waste is thrown in river, land or thrown in dump yards .This waste is increasing day by day & can cause serious health problemsIt can be prevented by 3R (reduce, reuse, recycle).Reducing waste, reuse in it as much as possible or giving to anyone else that can better use it. Reusing electronic waste can help prevent health problems, create job & reduce green house gas emission.Many company offer recycling of theirproduct nowadays. This business is developing rapidly on large scale.
Key words: Reduce, Reuse, and Recycle, Pollution etc.

I. INTRODUCTION

E-Waste refers to any discarded waste electrical or electronic equipment – basically anything that has a plug or runs on batteries. It includes all mobile phones, laptops, PCs, TVs and other electronic devices that have reached the end of their useful lives. These discarded devices contain numerous toxins that can cause environmental pollution and severe health hazards if not disposed responsibly.Used electronics devices which are destined for reuse, resale, salvage, recycling or disposal are also considered as e-waste. Informal processing of electronic waste in developing countries may cause serious health and pollution problems, as these countries have limited regulatory oversight of e-waste processing.Electronic scrap components, such as Cathode ray tubes (CRTs), may contain contaminants such as lead, cadmium, beryllium, or brominated flame retardants. Even in developed countries recycling and disposal of e-waste may involve significant risk to workers and communities and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.



	2000	2005	2007	2009	2010	2011	2012
Total e-waste generated	1,900,000	2,630,000	3,010,000	3,190,000	3,320,000	3,410,000	3,420,000
E-waste trashed	1,710,000	2,270,000	2,460,000	2,590,000	2,670,000	2,560,000	2,420,000
E-waste recycled	190,000	360,000	550,000	600,000	650,000	850,000	1,000,000
Percent Recycled	10.0%	13.7%	18.3%	18.8%	19.6%	24.9%	29.20%

A. Environmental impact

The processes of dismantling and disposing of electronic waste in the third world lead to a number of environmental impacts as illustrated in the graphic. Liquid and atmospheric releases end up in bodies of water, groundwater, soil, and air and therefore in land and sea animals – both domesticated and wild, in crops eaten by both animals and human, and in drinking water.

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One study of environmental effects in Guiyu, China found the following:
Airborne dioxins– one type found at 100 times levels previously measured
Levels of carcinogens in duck ponds and rice paddies exceeded international standards for agricultural areas and cadmium, copper, nickel, and lead levels in rice paddies were above international standards
Heavy metas found in roa dust – lead over 300 times that of a control village's road dust and copper over 100 times.

B. Recycling

Recycling is a process where equipment is reverted to a raw material form.Part of this evolution has involved greater diversion of electronic waste from energy-intensive down cycling processes (e.g., conventional recycling), This recycling is done by sorting, dismantling, and recovery of valuable materials. This diversion is achieved through reuse and refurbishing. The environmental and social benefits of reuse include diminished demand for new products and virgin raw materials (with their own environmental issues); larger quantities of pure water and electricity for associated manufacturing; less packaging per unit; availability of technology to wider swaths of society due to greater affordability of products; and diminished use of landfills.
Audiovisual components, televisions, VCRs, stereo equipment, mobile phones, other handheld devices, and computer components contain valuable elements and substances suitable for reclamation, including lead, copper, and gold.
One of the major challenges is recycling the printed circuit boards from the electronic wastes. The circuit boards contain such precious metals as gold, silver, platinum, etc. and such base metals as copper, iron, aluminium, etc. One way e-waste is processed is by melting circuit boards, burning cable sheathing to recover copper wire and open- pit acid leaching for separating metals of value. Conventional method employed is mechanical shredding and separation but the recycling efficiency is low. Alternative methods such as cryogenic decomposition have been studied for printed circuit board recycling, and some other methods are still under investigation.

C. Facts about E waste

1) Annual global e-waste production is pegged at approximately 50 Million metric tonnes.
2) India is expected to generate about 1.5 lakh tons of e-waste.
3) Barely 4% of the e-waste produced in India is recycled.
4) Over 95% of the e-waste generated in India is managed by theinformal sector.
5) 80 to 85% of electronic products were discarded in landfills orincinerators, which can release certain toxics into the air.
6) E-waste represents 2% of America's trash in landfills, but it equals 70% of overall toxic waste. The extreme amount of lead in electronics alone causes damage in the central and peripheral nervous systems, the blood and the kidneys.
7) 20 to 50 million metric tons of e-waste are disposed worldwide every year.
8) Cell phones and other electronic items contain high amounts of precious metals like gold or silver. Americans dump phones containing over $60 million in gold/silver every year.
9) Only 12.5% of e-waste is currently recycled.
10) For every 1 million cell phones that are recycled, 35,274 lbs of copper, 772 lbs of ilver, 75 lbs of gold, and 33 lbs of palladium can be recovered.

II. METHODOLOGY

The first step in applying any approach and methodology isto establish the geographical boundaries of the study area. The study area included the state boundaries of Delhi, consisting of municipal boundaries, rural and urban areas, andselected areas of the NCR. The geographical boundarieswere fixed considering the location of organized and unorganizedmarkets, places where each item is unloaded,traded, transported, dismantled, recycled, reused, repaired,processed, and disposed of, starting from generation/productionto its final end of life. These places were identifiedthrough a transect walk and preliminary surveys in thestudyarea.The EPA's most recent e-waste report shows that we got rid of (we trashed or recycled) 142,000 computers and over 416,000 mobile devices EVERY DAY!!We generated over 3.4 million tons of e-waste in the U.S. in 2012In 2012, we generated 3.412 million tons of e-waste in the U.S. Of this amount, only 1 million tons or 29.2 % was recycled, according to the EPA (up from 25% in 2011). The rest was trashed – in landfills or incinerators.

Amount of E-waste Generated:
Whether trashed or recycled, Amount of E-waste Generated.

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E-Waste by the Ton in 2010 – Was it Trashed or Recycled:
(According to the EPA)

Products	Total disposed**	Trashed	Recycled	Recycling Rate
	tons	tons tons		%
Computers	423,000	255,000	168,000	40%
Monitors	595,000	401,000	194,000	33%
Hard copy devices	290,000	193,000	97,000	33%
Keyboards and Mice	67,800	61,400	6,460	10%
Televisions	1,040	864,000	181,000	17%
Mobile devices	19,500	17,200	2,240	11%
TV peripherals*	Not included	Not included	Not included	Not included
Total (in tons)	2,440,000	1,790,000	649,000	27%

E-Waste by the UNIT in 2010 – Was it Trashed or Recycled (Same report as above, but reported in UNITs, not by TONS)

Products	Total disposed**	Trashed	Recycled	Recycling Rate
Units		Units	Units	%
Computers	51,900,000	31,300,000	20,600,000	40%
Monitors	35,800,000	24,100,000	11,700,000	33%
Hard copy devices	33,600,000	22,400,000	11,200,000	33%
Keyboards and Mice	82,200,000	74,400,000	7,830,000	10%
Televisions	28,500,000	23,600,000	4,940,000	17%
Mobile devices	152,000,000	135,000,000	17,400,000	11%
TV peripherals*	Not included	Not included	Not included	Not included
Total (in units_	384,000,000	310,000,000	73,700,000	19%

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What's included here?
Computer products include CPUs, desktops and portables.
Hard copy devices are printers, digital copiers, scanners, multi-functions and faxes.

Mobile devices are cell phones, personal digital assistants (PDAs), smartphones, and pagers.

*Study did not include a large category of e-waste: TV peripherals, such as

VCRs, DVD players, DVRs, cable/satellite receivers, converter boxes, game consoles.

**"Disposed" means going into trash or recycling. These totals don't include products that are no longer used, but which are still stored in homes and offices.

Source: EPA 1

In Kota city every day 14.5 Tons of e waste is collected in which 10 Tons is plastic and rest 4.5 ton is Hardware part.

Source: Bajaj kata near Dakanya station road no.1, January 2015.

III. CONCLUSION

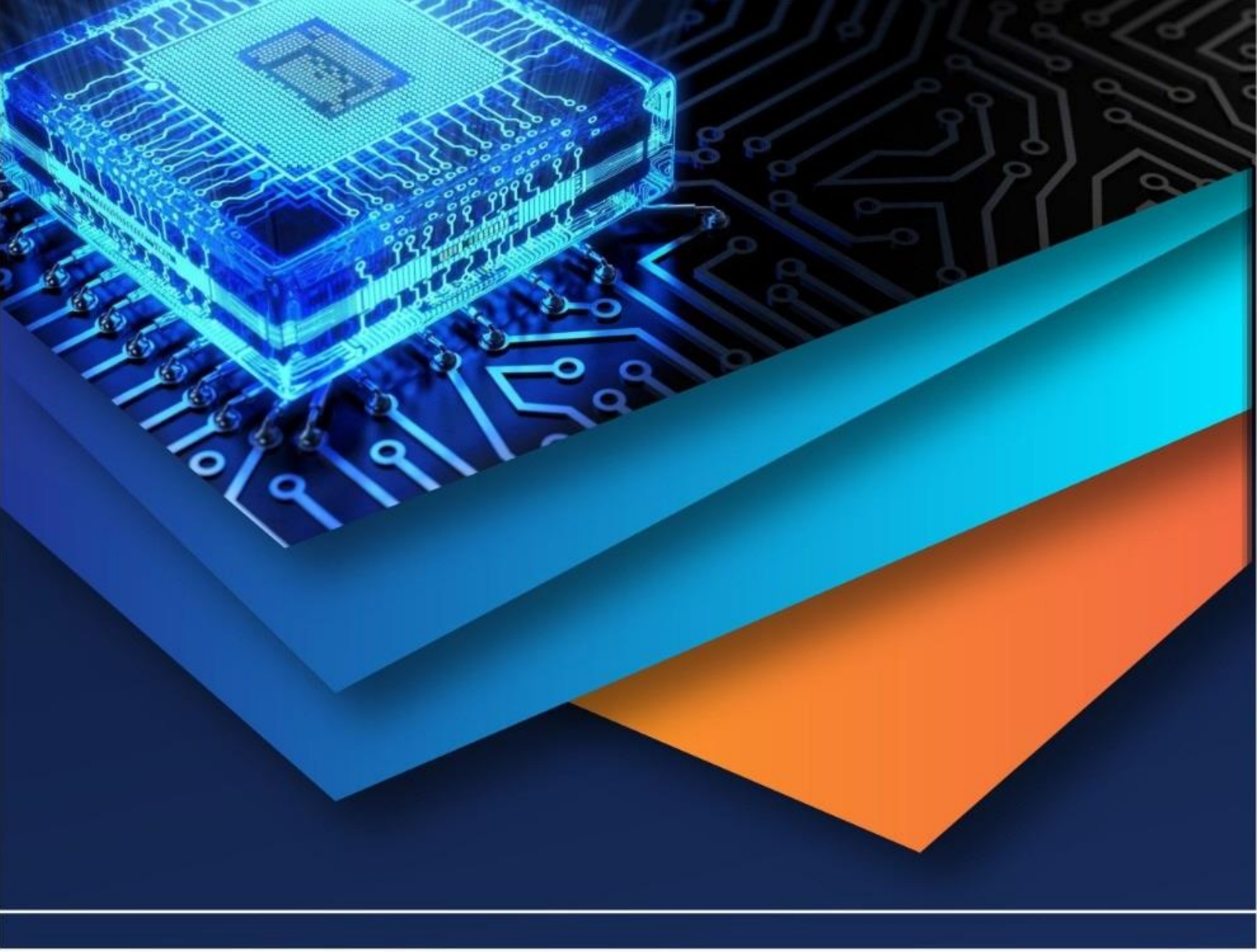
A. Buy second hand electronic devices, try to fix it before throwing it away, try to sell so that someone don't buy a new one.
B. Implement stricter laws and regulations to help facilitate a movement towards recycling and reusing.
C. Educate the population better so that they fully understand the potential consequences to improper disposal.
D. Many large corporations such as Best Buy or Verizon will take back old and unwanted electronic devices. Contact the large retailers before you throw away your electronic devices.
E. Donate to government supported programs.
F. Take advantage of your local community clean sweep.
G. Take it to a place to be properly recycled.

Consumer electronics manufacturers and retailers sponsor or operate more than 5,000 recycling locations nationwide and have vowed to recycle one billion pounds annually by 2016, a sharp increase from 300 million pounds industry recycled in 2010.

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